

**APPENDIX A**

1 (**Currently Amended**). A method of dependency management in a component-based system comprising:

defining a resource;

recording an identifier for the resource;

recording resource dependency relationships definitions for the resource;

identifying the type of dependency for each dependency resource by identifying the dependency as one of a resource that is contained by an entity and a resource that is used by the entity;

deploying the resource and the resource dependency relationships of the resource to a system including:

verifying the existence of all dependency relationship resources of the resource on the system during runtime;

transmitting a warning if any of the dependencies of the are unsatisfied;

creating an abstract resource based on a dependency relationship definition of the abstract resource if the abstract resource is not found on the system; and

ending deployment if any dependency relationship is unsatisfied and deployment can not be completed without dependency.

2 (Original). The method of claim 1 wherein defining a resource comprises storing a definition of a resource in a tool to be accessed by a service creation environment ("SCE"), a deployment tool and a service logic execution environment ("SLEE").

3 (Original). The method of claim 1 wherein recording an identifier to a resource comprises recording an identifier including resource identification, type identification and version.

4 (Original). The method of claim 3 wherein recording an identifier further comprises recording an identifier including scope of the resource.

5 (Original). The method of claim 1 wherein recording dependency information comprises recording associations between the resource identifier and resource identifiers for the dependency relationship resources.

6 (Original). The method of claim 1 wherein recording dependency information comprises automatically recording dependency information.

7 (Original). The method of claim 1 wherein recording dependency information comprises manually recording dependency information through one of: software coding and configuration.

8 (Original). The method of claim 1 wherein recording resource dependency definitions comprises defining dependencies for the resource.

9 (Canceled).

10 (Previously Presented). A method of dependency management in a component-based system comprising:

defining a resource;

recording an identifier for the resource;

recording resource dependency relationships definitions for the resource, wherein recording resource dependency definitions comprises identifying type of dependency for each dependency resource, wherein identifying the type of dependency comprises identifying the dependency as one of a resource that is contained by an entity and a resource that is used by the entity, wherein a resource that is contained by the entity is also used by the entity;

deploying the resource and the resource dependency  
relationships of the resource to a system including:  
    verifying the existence of all dependency relationship  
resources of the resource on the system;  
    transmitting a warning if any of the dependencies of  
the are unsatisfied;  
    creating an abstract resource based on a dependency  
relationship definition of the abstract resource if the abstract  
resource is not found on the system; and  
ending deployment if any dependency relationship is unsatisfied  
and deployment can not be completed without dependency.

11 (Previously Presented). The method of claim 10 wherein a  
resource can be deployed without satisfying a dependency  
relationship if the dependency resource is a uses type  
dependency.

12 (Previously Presented). The method of claim 10 wherein  
identifying the dependency type comprises identifying the  
dependency type according to the rules:

    if entity A uses resource B and resource B uses resource C,  
then A contains C;

    if A contains B and B contains C, then A contains C;

if A uses B and B contains C, then A uses C; and

if A contains B and B uses C, then A uses C.

13 (Original). The method of claim 1 wherein deploying the resource comprises using a deployment tool to deploy the resource wherein the deployment tool transmits information regarding dependency relationships to a resource management infrastructure.

14 (Original). The method of claim 1 wherein recording resource dependency relationships definitions for the resource comprises recording dependency relationships to at least one resource pool, the resource pool including a set of homogenous resources used interchangeably on a dynamic basis and allocated to dependent objects as needed.

15 (Original). The method of claim 1 further comprising creating a relationship between the resource and a resource pool manager if the resource will be used interchangeably with other resources in a resource pool, wherein the resource pool manager acts as a proxy for the pooled resources and handles dependency relationships on behalf of the pooled resources.

16 (**Currently Amended**). A system for dependency management in a component-based system comprising:

means for defining a resource;

means for recording an identifier for the resource;

means for recording resource dependency relationships definitions for the resource;

means for identifying the type of dependency for each dependency resource by identifying the dependency as one of a resource that is contained by an entity and a resource that is used by the entity;

means for deploying the resource and the resource dependency relationships of the resource to a system including:

means for verifying the existence of all dependency relationship resources of the resource on the system during runtime;

means for transmitting a warning if any of the dependencies of the are unsatisfied;

means for creating an abstract resource based on a dependency relationship definition of the abstract resource if the abstract resource is not found on the system; and

means for ending deployment if any dependency relationship is unsatisfied and deployment can not be completed without dependency.

17 (Original). The system of claim 16 wherein the means for defining a resource comprises means for storing a definition of a resource in a tool to be accessed by a service creation environment ("SCE"), a deployment tool and a service logic execution environment ("SLEE").

18 (Original). The system of claim 16 wherein the means for recording an identifier to a resource comprises means for recording an identifier including resource identification, type identification and version.

19 (Previously Presented). The system of claim 18 wherein the means for recording an identifier further comprises means for recording an identifier including a scope of the resource.

20 (Original). The system of claim 16 wherein the means for recording dependency information comprises means for recording associations between the resource identifier and resource identifiers for the dependency relationship resources.

21 (Original). The system of claim 16 wherein the means for recording dependency information comprises means for

automatically recording dependency information.

22 (Original). The system of claim 16 wherein the means for recording dependency information comprises means for manually recording dependency information through one of: software coding and configuration.

23 (Original). The system of claim 16 wherein the means for recording resource dependency definitions comprises means for defining dependencies for the resource.

24 (Original). The system of claim 16 wherein the means for recording resource dependency definitions comprises means for identifying type of dependency for each dependency resource.

25 (Previously Presented). A system for dependency management in a component-based system comprising:

- means for defining a resource;
- means for recording an identifier for the resource;
- means for recording resource dependency relationships definitions for the resource, wherein the means for recording resource dependency definitions comprises means for identifying type of dependency for each dependency resource wherein the



means for identifying the type of dependency comprises means for identifying the dependency as one of a resource that is contained by an entity and a resource that is used by the entity, wherein a resource that is contained by the entity is also used by the entity;

means for deploying the resource and the resource dependency relationships of the resource to a system including:

means for verifying the existence of all dependency relationship resources of the resource on the system;

means for transmitting a warning if any of the dependencies of the are unsatisfied;

means for creating an abstract resource based on a dependency relationship definition of the abstract resource if the abstract resource is not found on the system; and  
means for ending deployment if any dependency relationship is unsatisfied and deployment can not be completed without dependency.

26 (Original). The system of claim 25 wherein a resource can be deployed without satisfying a dependency relationship if the dependency resource is a uses type dependency.

27 (Previously Presented). The system of claim 25 wherein the

means for identifying the dependency type comprises means for identifying the dependency type according to the rules:

if entity A uses resource B and resource B uses resource C,  
then A contains C;

if A contains B and B contains C, then A contains C;

if A uses B and B contains C, then A uses C; and

if A contains B and B uses C, then A uses C.

28 (Original). The system of claim 16 wherein the means for deploying the resource comprises means for using a deployment tool to deploy the resource wherein the deployment tool transmits information regarding dependency relationships to a resource management infrastructure.

29 (Original). The system of claim 16 wherein the means for recording resource dependency relationships definitions for the resource comprises means for recording dependency relationships to at least one resource pool, the resource pool including a set of homogenous resources used interchangeably on a dynamic basis and allocated to dependent objects as needed.

30 (Original). The system of claim 16 further comprising means for creating a relationship between the resource and a resource

pool manager if the resource will be used interchangeably with other resources in a resource pool, wherein the resource pool manager acts as a proxy for the pooled resources and handles dependency relationships on behalf of the pooled resources.

31 (**Currently Amended**). A method of managing dependencies in a component-based system comprising:

- performing at least one of a startup and an initialization of a resource up to inter-component connection;

- determining if the resource has any dependency resources, the resource and its dependency resources forming a group of resources;

  - determining if dependency resources have started up;

  - waiting for dependency resources to complete initialization;

  - establishing connections to dependency resources;

  - proceeding with the at least one of startup and initialization;

  - establishing connections to the resource from the dependency resources; and

  - monitoring the dependency resources during runtime.

32 (Original). The method of claim 31 further comprising:

receiving indication from the resource that its internal resources have been successfully allocated and that the resource is waiting for connection;

requesting connection information from an inter-component connection manager; and

receiving inter-component connection information from the inter-component connection manager.

33 (Original). The method of claim 31 wherein determining if the resource has any dependency resource comprises determining dependency inter-component connection information from inter-component connection information received from an inter-component connection manager.

34 (Original). The method of claim 31 wherein inter-component connection the resources comprises

placing the resource on a ready for inter-component connection list until the dependency resources have been started;

receiving indication from the dependency resource that its internal resources have been successfully allocated and that the dependency resource is waiting for inter-component connection;

requesting inter-component connection information from a

inter-component connection manager; and

traversing all entries of inter-component connection  
information.

35 (Original). The method of claim 31 wherein performing startup  
of the dependency resources comprises requesting a resource pool  
manager to assign a dependency resource from the resource pool.

36 (**Currently Amended**). A system for managing dependencies in a  
component-based system comprising:

means for performing at least one of a startup and an  
initialization of a resource up to inter-component connection;

means for determining if the resource has any dependency  
resources, the resource and its dependency resources forming a  
group of resources;

means for determining if dependency resources have started  
up;

means for waiting for dependency resources to complete  
initialization;

means for establishing connections to dependency resources;

means for proceeding with the at least one of startup and  
initialization;

means for establishing connections to the resource from the

dependency resources; and

means for monitoring the dependency resources during runtime.

37 (Original). The system of claim 36 further comprising:

means for receiving indication from the resource that its internal resources have been successfully allocated and that the resource is waiting for inter-component connections;

means for requesting inter-component connection information from a inter-component connection manager; and

means for receiving inter-component connection information from the inter-component connection manager.

38 (Original). The system of claim 36 wherein the means for determining if the resource has any dependency resource comprises means for determining dependency inter-component connection information from inter-component connection information received from an inter-component connection manager.

39 (Original). The system of claim 36 wherein the means for performing inter-component connection on the resources comprises

means for placing the resource on a ready for inter-component connection list until the dependency resources have

been started;

means for receiving indication from the dependency resource that its internal resources have been successfully allocated and that the dependency resource is waiting for inter-component connections;

means for requesting inter-component connection information from a inter-component connection manager; and

means for traversing all entries of inter-component connection information.

40 (Original). The system of claim 36 wherein the means for performing startup of the dependency resources comprises means for requesting a resource pool manager to assign a dependency resource from the resource pool.

41 (**Currently Amended**). A method of managing dependencies in a component-based system comprising:

receiving indication of a state change for a first resource during runtime, wherein the indication of the state change is received from a managed object interpreter of the first resource;

transmitting the indication of the state change of the first resource to a second resource dependent on the first

resource; and

receiving indication of a state change of the second resource.

42 (Original). The method of claim 41 wherein receiving indication of the state change of the first resource comprises receiving indication of the state change from a managed object view of the first resource, transmitting the indication of state change to the second resource comprises transmitting the indication to a managed object view of the second resource and receiving indication of the state change of the second resource comprises receiving the indication of state change from the managed object view of the second resource.

43 (**Currently Amended**). A system for managing dependencies in a component-based system comprising:

means for receiving indication of a state change for a first resource during runtime, wherein the indication of the state change is received from a managed object interpreter of the first resource;

means for transmitting the indication of the state change of the first resource to a second resource dependent on the first resource; and



means for receiving indication of a state change of the second resource.

44 (Original). The system of claim 43 wherein the means for receiving indication of the state change of the first resource comprises means for receiving indication of the state change from a managed object view of the first resource, the means for transmitting the indication of state change to the second resource comprises means for transmitting the indication to a managed object view of the second resource and the means for receiving indication of the state change of the second resource comprises means for receiving the indication of state change from the managed object view of the second resource.

45 (**Currently Amended**). A computer [readable medium] processor-based system, the computer [readable medium] processor-based storing computer readable code executable to perform a method for managing a component-based system comprising:

- defining a resource;
- recording an identifier for the resource;
- recording resource dependency relationships definitions for the resource;
- identifying the type of dependency for each dependency

resource by identifying the dependency as one of a resource that is contained by an entity and a resource that is used by the entity;

deploying the resource and the resource dependency relationships of the resource to a system including:

verifying the existence of all dependency relationship resources of the resource on the system during runtime;

transmitting a warning if any of the dependencies of the are unsatisfied;

creating an abstract resource based on a dependency relationship definition of the abstract resource if the abstract resource is not found on the system; and

ending deployment if any dependency relationship is unsatisfied and deployment can not be completed without dependency.

46 (**Currently Amended**). A computer [readable medium] processor-based system, the computer [readable medium] processor-based system storing computer readable code executable to perform a method for managing a component-based system comprising:

performing at least one of a startup and an initialization of a resource up to inter-component connection;

determining if the resource has any dependency resources,

the resource and its dependency resources forming a group of  
resources;

determining if dependency resources have started up;

waiting for dependency resources to complete  
initialization;

establishing connections to dependency resources;

proceeding with the at least one of startup and  
initialization;

establishing connections to the resource from the  
dependency resources; and

monitoring the dependency resources during runtime.

47 (**Currently Amended**). A computer [readable medium] processor-  
based system, the computer [readable medium] processor-based  
system storing computer readable code executable to perform a  
method for managing a component-based system comprising:

receiving indication of a state change for a first resource  
during runtime, wherein the indication of the state change is  
received from a managed object interpreter of the first  
resource;

transmitting the indication of the state change of the  
first resource to a second resource dependent on the first  
resource; and

receiving indication of a state change of the second  
resource.